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## TECHNICAL NOTES

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ROCKY MOUNTAIN STATION

### STN PUB ALASKA FOREST RESEARCH CENTER

U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

No. 20

JUNEAU, ALASKA

#### Seasonal Distribution of Radial Growth

Radial growth of the tree bole at breast height as measured by a dendrometer showed less precise seasonal peaks than did leader growth in the Ketchikan area of the Tongass National Forest. In general, growth began about May 15 with the greatest portion of the seasonal growth occurring during the seventh week (June 26-July 2). Second-growth trees averaged 15 percent and old growth 18 percent of the seasonal total during this period.

The relative rates of growth by species changed during the season. In second-growth hemlock 50 percent of the increment was complete by the sixth week. Redcedar required 7 and spruce  $7\frac{1}{2}$  weeks. Old growth spruce and hemlock required about  $7\frac{1}{2}$  weeks. Ninety percent of the second-growth increment was complete in  $11\frac{1}{2}$  weeks for spruce and about  $13\frac{1}{2}$  weeks for hemlock and redcedar. Old growth spruce and hemlock required about  $13\frac{1}{2}$  weeks.

Second-growth spruce and hemlock had essentially completed growth by the 14th week, August 20. Redcedar showed no definite cessation as late as September 24 when the last observations were taken. Old growth spruce and hemlock appeared to terminate at 17 weeks in mid-September. After mid-August, as a result of cloudy, rainy weather affecting the rate of transpiration, radial change by individual trees and species showed considerable variation. The periodic and cumulative percentages of radial increment, using the last reading as the average termination radius, is given in the following table.

<u>Week ending</u>	<u>Periodic radial growth in percent</u>					<u>Cumulative radial growth in percent</u>				
	<u>Second-growth</u>			<u>Old growth</u>		<u>Second-growth</u>			<u>Old growth</u>	
	<u>S</u>	<u>H</u>	<u>C</u>	<u>S</u>	<u>H</u>	<u>S</u>	<u>H</u>	<u>C</u>	<u>S</u>	<u>H</u>
May 21	6	13	7	4	15	6	13	7	4	15
" 28	-2	3	3	0	-17	4	16	10	4	-2
June 4	3	10	5	3	7	7	26	15	7	5
" 11	3	7	4	2	3	10	33	19	9	8
" 18	12	11	9	6	12	22	44	28	15	20
" 26	9	8	10	9	6	31	52	38	24	26
July 2	18	13	15	17	21	49	65	53	41	47
" 9	11	5	6	11	4	60	70	59	52	51
" 16	13	4	9	7	7	73	74	68	59	58
" 23	7	2	6	11	1	80	76	74	70	59
" 30	8	6	7	8	6	88	82	81	78	65
Aug. 6	8	7	6	9	11	96	89	87	87	76
" 13	-2	1	3	-1	-5	94	90	90	86	71
" 20	10	10	7	11	19	104	100	97	97	90
" 27	-2	-1	-2	0	-1	102	99	95	97	89
Sept. 2	-8	-5	-5	-3	-9	94	94	90	94	80
" 10	8	7	7	5	15	102	101	97	99	95
" 17	2	2	1	3	8	104	103	98	102	103
" 24	-4	-3	2	-2	-3	100	100	100	100	100